TRENDS IN
ANALYTICAL
CHEMISTRY

REFERENCE EDITION
1992

Volume 11

CONTENTS

JANUARY, 1992

feature
United Kingdom Forensic Science Services at a cross road? *by B. Caddy* 1

monitor
Immunoassays: from RIA to VIA, *by T. Braun, A. Klein, S. Zsindely, and W.S. Lyon* 5

computer corner
Analysis of scanned data by methods of time series analysis, *by C. Meinicke, E. Sorkau, St. Knoblauch and H.W. Zwanziger* 8

trends
Selectivity and sensitivity in coupled chromatographic techniques as applied in pesticide residue analysis, *by P. van Zoonen, E.A. Hogendoorn, G.R. van der Hoff and R.A. Baumann* 11
Hyphenated techniques applied to environmental speciation studies, *by O.F.X. Donard and F.M. Martin* 17
Capillary electrophoresis in chemical/pharmaceutical quality control, *by A. Pluym, W. Van Ael and M. De Smet* 27
In-situ fluorescence analysis using nanosecond decay time imaging, *by C.G. Morgan, A.C. Mitchell and J.G. Murray* 32
Image analysis in chemistry. I. Properties of images, greylevel operations, the multivariate image, *by P. Geladi, E. Bengtsson, K. Esbensen and H. Grahn* 41

FEBRUARY, 1992

opinion
Analytical chemistry. What is it? Who needs it? Why teach it? *by P.T. Kissinger* 54

trends
Bioluminesence/chemiluminescence based sensors, *by P.R. Coulet and L.J. Blum* 57
Electronic gas and odour detectors that mimic chemoreception in animals, *by K.C. Persaud* 61
Inductively coupled plasma–mass spectrometry for biological analysis, *by S.F. Durrant* 68
Fluorogenic reagents for the derivatization of catecholamines and related compounds for liquid chromatographic analysis of biological samples, *by Y. Ohkura and H. Nohta* 74
Silica based, solid phase reagents for derivatizations in chromatography, *by F.-X. Zhou, J.M. Thorne and I.S. Krull* 80

MARCH, 1992

computer corner

Quantitative multicomponent analysis of complex mixtures by means of Full Spectrum Quantitation and principal component analysis, *by J.A. Weismüller and A. Chanady* **86**

interface

Computer considerations for a flow reversal/flow recycle continuous flow analysis system, *by E.B. Townsend IV and S.R. Crouch* **90**

trends

Mapping post-translational modifications of viral proteins by mass spectrometry, *by J.J. Gormann* **96**

Supported liquid membrane techniques for sample preparation and enrichment in environmental and biological analysis, *by J.Å. Jönsson and L. Mathiasson* **106**

Fluorescence detection in capillary electrophoresis, *by L.N. Amankwa, M. Albin and W.G. Kuhr* **114**

Image analysis in chemistry. II. Multivariate image analysis, *by P. Geladi, H. Grahn, K. Esbensen and E. Bengtsson* **121**

APRIL, 1992

computer corner

Simulations of analytical processes using Visual Basic, *by H.R. Keller, P. Fernandes de Aguiar and D.L. Massart* **131**

interface

Computer-aided voltammetric method development employing a knowledge-based expert system, *by I. Ruisánchez, M.S. Larrechi, F.X. Rius and M. Esteban* **135**

trends

Biomolecular tracing through accelerator mass spectrometry, *by J.S. Vogel and K.W. Turteltaub* **142**

Solid-phase reactors in flow injection analysis, by *M.D. Luque de Castro* **149**

Capillary electrophoresis: a powerful tool for biomedical analysis and research? *by D. Perrett and G. Ross* **156**

Analysis of antioxidants in polymer material by a strategy employing tandem mass spectrometry and liquid chromatography, *by H. Egsgaard, E. Larsen, W.B. Pedersen and L. Carlsen* **164**

MAY, 1992

computer corner

Data analysis of chaotic chemical reactions, *by G. Baier, M. Klein and J.L. Hudson* **169**

trends

Bioanalytical sample preparation using microdialysis and ultrafiltration capillaries, *by M.C. Linhares and P.T. Kissinger* **171**

Monitoring molecules in the conscious brain by microdialysis, *by B.H.C. Westerink* **176**

Models of time-series analysis – a helpful tool for the evaluation of noisy data in distribution analysis, *by K. Doerffel* **182**

High-molecular-weight hydrocarbons: a new frontier in organic geochemistry, *by J.C. del Rio and R.P. Philp* 187
Gasoline analysis by rapid scanning absorbance detection for capillary gas chromatography, *by D.J. Bornhop and G.R. Verga* 194

JUNE/JULY, 1992

monitor

Shpol'skii fluorimetry: the anatomy of an eponym, *by T. Braun and A. Klein* 200

computer corner

The Kalman filter in quantitative multicomponent analysis, *by G. Gauglitz, M. Mettler and S. Weiss* 203

trends

Bio-analytical applications of Fourier transform infrared spectroscopy, *by M. Jackson and H.H. Mantsch* 206
Diode laser-induced fluorescence detection in chromatography, *by A.J.G. Mank, H. Lingeman and C. Gooijer* 210
X-ray absorption spectroscopy in chemistry. I. Extended X-ray absorption fine structure, *by P. Behrens* 218
Toxicological drug screening by thin-layer chromatography, *by I. Ojanperä* 222

AUGUST, 1992

computer corner

Automated FIA demonstrated on chemiluminometric lactate determination using the software package FIACRE, *by M. Bush and J. Polster* 230

trends

Mechanism of the peroxyoxalate chemiluminescence reaction, *by P.J.M. Kwakman, G.J. de Jong and U.A.Th. Brinkman* 232
X-ray absorption spectroscopy in chemistry. II. X-ray absorption near edge structure, *by P. Behrens* 237
Speciation of mercury in different compartments of the environment, *by W. Baeyens* 245
Fuel residues and organic combustion products in diesel exhaust emissions: sources, sampling and analysis, *by M.M. Rhead and C.J. Trier* 255
The potential uses of bonded liquid crystal materials in high-performance liquid chromatography and supercritical-fluid chromatography, *by J.J. Pesek and E.J. Williamsen* 259

SEPTEMBER, 1992

monitor

The comparative standing of individual instrumental analytical techniques, *by T. Braun and S. Zsindely* 267

computer corner

On the efficiency of algorithms for multivariate linear calibration used in analytical spectroscopy, *by R. Marbach and H.M. Heise* 270

trends
The history and analytical chemistry of beer bitter acids, *by D. De Keukeleire, J. Vindevogel, R. Szücs and P. Sandra* 275
Gel-filled capillaries for nucleic acid separations in capillary electrophoresis, *by Y. Baba and M. Tsuhako* 280
Plasma spectrometric detection for supercritical fluid chromatography, *by J.M. Carey and J.A. Caruso* 287
Perspectives in residue analysis; the use of immobilized antibodies in (multi) residue analysis, *by L.A. van Ginkel, R.W. Stephany, H.J. van Rossum and P.W. Zoontjes* 294
Electrochemistry of biopolymers, *by J.A. Cox and A. Przyjazny* 298
Comparison of use of immobilized cells and immobilized enzymes for bioanalysis: considerations in determination of ethanol, *by A. Wiseman* 303

OCTOBER, 1992

monitor
Electrospray ionization-mass spectrometry: a quantitative snapshot on an instrumental breakthrough, *by T. Braun and S. Zsindely* 307

computer corner
A program for the graphical evaluation of pK_a values from spectrophotometric data, *by M.J. Citores, R.M. Alonso and L.A. Fernández* 310

trends
Mass spectrometric detection for thin-layer chromatographic separations, *by K.L. Busch* 314
Capillary electrophoresis with electrochemical detection, *by Y.F. Yik and S.F.Y. Li* 325
High-field NMR spectroscopy as an analytical tool for quantitative determinations: pitfalls, limitations and possible solutions, *by Cs. Szántay, Jr.* 332
Detection of bioactive compounds using a lipid-coated quartz-crystal microbalance, *by Y. Okahata and H. Ebato* 344

NOVEMBER/DECEMBER, 1992

computer corner
MSDCARB – a database and software for mass spectral data of carbohydrates, *by M. Ďurindová, I. Klbik and V. Kováčik* 355

trends
Abrasive stripping voltammetry – an electrochemical solid state spectroscopy of wide applicability, *by F. Scholz and B. Lange* 359
Polymer coatings as stationary phases in high-performance liquid chromatography, *by M. Hanson and K.K. Unger* 368
Automatic determination of physico-chemical parameters by the flow-rate gradient technique, *by J. Marcos, A. Ríos and M. Valcárcel* 373
Hydrogen peroxide in the marine environment: cycling and methods of analysis, *by D. Price, P.J. Worsfold and R.F.C. Mantoura* 379
Lasers in mass spectrometry, *by J. Gormally* 384
In-process control of insulin production by high-performance liquid chromatography, *by G. Mandrup* 389

Author index 397
Subject index 400